

Notice of Allowability

Application No.

10/733,898

Examiner

Charles G Freay

Applicant(s)

PRIMLANI, INDURU J.

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the telephone interview of February 3, 2005.
2. ☒ The allowed claim(s) is/are 1,3-7 and 9-30.
3. ☒ The drawings filed on 11 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 12/22/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 02/03/2005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Indru J. Primlani on February 3, 2005.

The application has been amended as follows:

Claim 1 has been rewritten as follows:

-- 1. (Amended) A method for producing power from combustion of a fuel which comprises:

a. feeding a pressurized Oxygen-containing gas and then a combustible fuel to a first combustion zone of constant volume to form a combustible mixture therein combusting said combustible mixture in said first combustion zone under substantially adiabatic conditions to form gaseous combustion products and exhausting said gaseous combustion products from said first combustion zone at a first predetermined range of elevated temperature and pressure in a first cycle;

b. feeding a pressurized Oxygen-containing gas and then a combustible fuel to a second combustion zone of constant volume [process] to form a combustible mixture therein combusting said gaseous combustible mixture in said second combustion zone under substantially adiabatic conditions to form gaseous combustion products and exhausting said gaseous combustion products from said second

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combustion zone at [a] said first predetermined range of elevated temperature and pressure in a second cycle;

c. feeding said exhausted [combustion] gaseous combustion products from each of said combustion zones to [a work producing zone] a mixing zone, forming in said mixing zone an admixture of said exhausted gaseous combustion products and a secondary gas at a second predetermined range of temperature and pressure lower than said first predetermined range; and expanding said admixture [gases] in [said] a work-producing zone whereby work is generated by said expansion; [and]

d. alternately repeating said first and second cycles, each of said cycles being operated to provide a substantially continuous stream of exhausted gaseous combustion products sequentially from said first and second combustion zones to said mixing zone; and

e. feeding the admixture of said exhausted gaseous combustion products and said secondary gas to said work producing zone. --

Claim 2 has been canceled.

In line 1 of each of claims 3 and 4 "2" has been deleted and --1-- has been inserted therefore.

In claim 4 line 2 "admixing" has been deleted and --mixing-- has been inserted therefore.

Claim 7 has been rewritten as follows:

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-- 7. (Amended) Apparatus for producing power from combustion of fuel, which comprises:

a. a plurality of gas reactors, each said gas reactor having an elongated sealed housing of constant volume, inlets and outlets at opposite ends thereof, means for thermally insulating said housing and means for propagating a modulated flame within said housing;

b. first conduit means communicating with said inlets for feeding a pressurized Oxygen-containing gas and then a combustible fuel to the interior of each of said reactors to form a combustible mixture therein;

c. second conduit means communicating with said outlets for exhausting gaseous combustion products from said reactors;

d. means for producing work by expansion of gases, said work-producing means having inlets and outlets and third conduit means providing fluid communication between said gas reactor [reactors] outlets and said work-producing means inlets; [and]

e. first control means for operating said gas reactors to provide a substantially continuous flow of exhausted gaseous combustion products to said work producing means alternately and sequentially from said gas reactors; and

f. mixing means for admixing a secondary gas with said combustion products to form an admixture of gases at a second predetermined range of temperature and pressure lower than said first predetermined range, said mixing means being between said gas reactors and said work-producing means, and means for feeding said admixture to said work-producing means.--

Claim 8 has been canceled.

In line 1 of claims 9, 10, 11, 18 and 21 "8" has been deleted and --7-- has been inserted therefore.

In claim 12 line 13 "by" has been deleted and after "forces" --of-- has been inserted.

In line 1 of claims 14, 15, and 18 "Apparatus" has been deleted and --The apparatus-- has been inserted therefore.

In line 2 of claims 14 and 15 "arranged in series and/or parallel suitable to load conditions" has been deleted.

In claim 16 line 5 "in series or parallel" has been deleted.

In claim 22 line 1 "said" has been deleted and --a second-- has been inserted therefore.

In claim 22 line 1 after "is" --provided-- has been inserted.

In claim 22 line 2 ""feeding" has been deleted and --second conduit-- has been inserted therefore.

On claim 22 line 2 before "work-" --second-- has been inserted.

In claim 22 line 2 and 3 "admixture" has been deleted and --gaseous combustion products-- has been inserted therefore.

In claim 23 line 1 "work-producing" has been deleted and --second conduit-- has been inserted therefore.

In claim 23 line 4 "feeding" has been deleted and --second conduit-- has been inserted therefore.

In claim 23 lines 4 and 5 "a portion of said admixture to said work-producing means and a portion" has been deleted and --said gaseous combustion products-- has been inserted therefore.

The following new claims have been inserted.

25. (New) The apparatus of claim 14 wherein the rotary gas motors are arranged in series.

26. (New) The apparatus of claim 14 wherein the rotary gas motors are arranged in parallel.

27. (New) The apparatus of claim 15 wherein the reciprocating gas motors are arranged in series.

28. (New) The apparatus of claim 15 wherein the reciprocating gas motors are arranged in parallel.

29. (New) The apparatus of claim 16 wherein the turbines are arranged in series.

30. (New) The apparatus of claim 16 wherein the turbines are arranged in parallel.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: the prior art neither discloses nor makes obvious a power producing plant or a method of operating a power producing plant, having a plurality of substantially adiabatic combustors operating in an alternating and sequential manner to create a substantially continuous stream of exhausted gaseous products which are fed to a mixing zone, forming in the mixing zone an admixture of the exhausted combustion gases and a secondary gas at a second predetermined range of temperature and pressure lower than a predetermined range of elevated temperature and pressure at which the gaseous combustion products are created, and feeding the admixture to a work producing zone.

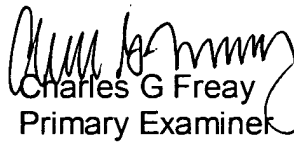
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Charles G Freay
Primary Examiner
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CGF
February 5, 2005